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February 12, 2010

Docket Nos.: 50-425

NL-10-0211

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555-0001

Vogtle Electric Generating Plant-Unit 2
Licensee Event Report 2-2009-001
Instrument Air Isolation Results in a Manual Reactor Trip

Ladies and Gentlemen:

In accordance with the requirements of 10CFR50.73(a)(2)(iv)(A), Southern Nuclear Operating Company (SNC) is submitting the enclosed Licensee Event Report.

This letter contains no NRC commitments. If you have any questions, please advise.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "T. E. Tynan".

T. E. Tynan
Vice President – Vogtle

TET/TMH/sdc

Enclosure: LER 2-2009-001

cc: Southern Nuclear Operating Company
Mr. J. T. Gasser, Executive Vice President
Mr. T. E. Tynan, Vice President – Vogtle
Ms. P. M. Marino, Vice President – Engineering
RType: CVC7000

U. S. Nuclear Regulatory Commission
Mr. L. A. Reyes, Regional Administrator
Ms. D. N. Wright, NRR Project Manager – Vogtle
Mr. M. Cain, Senior Resident Inspector – Vogtle

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NRR

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LICENSEE EVENT REPORT (LER)

Estimated burden per response to comply with this mandatory collection request: 50 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records and FOIA/Privacy Service Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by Internet e-mail to infocollects@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

1. FACILITY NAME
Vogtle Electric Generating Plant – Unit 2

2. DOCKET NUMBER
05000 425

3. PAGE
1 OF 4

4. TITLE
Instrument Air Isolation Results in a Manual Reactor Trip

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO.	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
12	23	2009	2009	001	0	02	12	2010		05000
										05000

9. OPERATING MODE
1

10. POWER LEVEL
100

11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR§: (Check all that apply)

<input type="checkbox"/> 20.2201(b)	<input type="checkbox"/> 20.2203(a)(3)(i)	<input type="checkbox"/> 50.73(a)(2)(i)(C)	<input type="checkbox"/> 50.73(a)(2)(vii)
<input type="checkbox"/> 20.2201(d)	<input type="checkbox"/> 20.2203(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)
<input type="checkbox"/> 20.2203(a)(1)	<input type="checkbox"/> 20.2203(a)(4)	<input type="checkbox"/> 50.73(a)(2)(ii)(B)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)
<input type="checkbox"/> 20.2203(a)(2)(i)	<input type="checkbox"/> 50.36(c)(1)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(ix)(A)
<input type="checkbox"/> 20.2203(a)(2)(ii)	<input type="checkbox"/> 50.36(c)(1)(ii)(A)	<input checked="" type="checkbox"/> 50.73(a)(2)(iv)(A)	<input type="checkbox"/> 50.73(a)(2)(x)
<input type="checkbox"/> 20.2203(a)(2)(iii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(v)(A)	<input type="checkbox"/> 73.71(a)(4)
<input type="checkbox"/> 20.2203(a)(2)(iv)	<input type="checkbox"/> 50.46(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(v)(B)	<input type="checkbox"/> 73.71(a)(5)
<input type="checkbox"/> 20.2203(a)(2)(v)	<input type="checkbox"/> 50.73(a)(2)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(v)(C)	<input type="checkbox"/> OTHER
<input type="checkbox"/> 20.2203(a)(2)(vi)	<input type="checkbox"/> 50.73(a)(2)(i)(B)	<input type="checkbox"/> 50.73(a)(2)(v)(D)	Specify in Abstract below or in NRC Form 366A

12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME
Vogtle Electric Generating Plant/Mark Hickox, Principal Licensing Engineer

TELEPHONE NUMBER (Include Area Code)
(706) 826-4129

13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX

14. SUPPLEMENTAL REPORT EXPECTED

☐ YES (If yes, complete 15. EXPECTED SUBMISSION DATE)☒ NO

15. EXPECTED SUBMISSION DATE

MONTH	DAY	YEAR

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)

On December 23, 2009 at approximately 15:25 hours Eastern Standard Time (EST), Vogtle Electric Generating Plant (VEGP), Unit 2 was manually tripped from 100% power due to a loss of instrument air to the turbine building. Instrument air low pressure alarms were received in the control room and secondary side valves responded to the loss of instrument air. Due to the loss of air pressure, several secondary side valves positioned to their fail safe position. This ultimately led to a decrease in suction pressure to one of the main feedwater pumps causing the main feedwater pump to trip on low suction pressure. In anticipation of loss of feedwater flow to the steam generators, the control room operators manually tripped the reactor in accordance with the Abnormal Operating Procedure (AOP) for a main feedwater malfunction. All control rods fully inserted and the motor driven auxiliary feedwater pumps automatically started on low steam generator water level in one of the steam generators in accordance with plant design. All of the control rods fully inserted and the plant was stabilized in Mode 3.

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CONTINUATION SHEET

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NARRATIVE (If more space is required, use additional copies of NRC Form 366A)

A. REQUIREMENT FOR REPORT

This report is required per 10CFR50.73(a)(2)(iv)(A) due to a manual actuation of the Reactor Protection System (RPS) and automatic actuation of the Auxiliary Feedwater (AFW) System.

B. UNIT STATUS AT TIME OF EVENT

At the time of this event, Unit 2 was in Mode 1 (Power Operation) at 100% rated thermal power.

C. DESCRIPTION OF EVENT

On December 23, 2009 System Operators were dispatched to the Turbine Building to return an instrument air dryer to service which had been tagged out for maintenance. To return the instrument air dryer to service required a specific section of the system operating procedure to be performed. Once the System Operators arrived at the Turbine Building to return the instrument air dryer to service, they performed the incorrect section of the system operating procedure. This resulted in isolating instrument air to the Unit 2 Turbine Building, the Unit 2 Control Building and Unit 2 Containment. In response to the loss of instrument air pressure, several valves assumed their fail-safe position. In particular, several air operated valves on the secondary side repositioned which ultimately resulted in a decrease in suction pressure to the B main feedwater pump. The B main feedwater pump tripped on low suction pressure in accordance with plant design. Once the B main feedwater pump tripped, the control room operators, in anticipation of loss of main feedwater flow to the steam generators, manually tripped the reactor in accordance with the Abnormal Operating Procedure (AOP) for a main feedwater malfunction. Subsequently, when water level in one of the steam generators (SG) reached the lo-lo SG water level setpoint, the motor driven auxiliary feedwater pumps automatically started in accordance with plant design. All control rods fully inserted and all safety systems functioned in accordance with plant design. The plant was stabilized in Mode 3.

D. CAUSE OF EVENT

The direct cause of the reactor trip was the inappropriate isolation of the turbine building instrument air header while restoring an instrument air dryer to service following maintenance. Both the system operator tasked with performing the procedure and the system operator who was performing a peer check were first time performers of the activity. Following a pre-job briefing for the clearance restoration, the system operators notified the operator at the controls (OATC) in the Unit 2 Control Room of the pending restoration of the instrument air dryer. Once the system operators arrived in the Turbine building, they discussed the task further prior to beginning.

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NARRATIVE (If more space is required, use additional copies of NRC Form 366A)

However, due to a failure to conduct an adequate pre-job brief of the system restoration per the system operating procedure, inadequate supervisory oversight, and a failure to apply fundamental system knowledge of the instrument air system by the system operators, they performed the incorrect section of the procedure. This resulted in isolating instrument air to the Unit 2 Turbine building, Unit 2 Control Building, and Unit 2 Containment.

The procedure had weaknesses as it did not contain adequate cautions and warnings to prevent the inadvertent operation of the instrument air header valves. Furthermore, the instrument air header valves were not labeled as potential reactor trip hazards. The isolation of instrument air to the Turbine building ultimately resulted in several secondary side air operated valves in the main feedwater and condensate system assuming their fail-safe position. This condition ultimately led to the decrease in suction pressure to the B main feedwater pump. Once the main feedwater pump suction pressure reached the low pressure setpoint, the B main feedwater pump automatically tripped. The reactor was subsequently manually tripped in anticipation of the loss of feedwater flow to the steam generators in accordance with procedure guidance.

E. ANALYSIS OF EVENT

When instrument air was isolated to the Unit 2 Turbine building, Unit 2 Control Building and Unit 2 Containment, pressure in the instrument air header in these buildings began to decrease. As pressure in the instrument air header decreased, pneumatically operated valves began to assume their fail-safe position. The instrument air system at Vogtle Electric Generating Plant (VEGP) is required for normal operation of the plant but is not essential for safe shutdown of the plant. Pneumatically operated valves in the plant which are essential for safe shutdown and accident mitigation are designed to assume a fail-safe position upon loss of instrument air pressure. Therefore, instrument air is not essential following a design basis event or for safe shutdown of the plant. Once the main feedwater pump tripped, the control room operators acted appropriately to trip the reactor and prevent a challenge to the automatic trip actuation circuitry. Since all safety related components responded in accordance with plant design, all control rods fully inserted, and the motor driven auxiliary feedwater pumps automatically started on lo-lo steam generator water level, this event did not result in a safety system functional failure. Based on these considerations, there was no adverse affect on plant safety or on the health and safety of the public as a result of this event.

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NARRATIVE (If more space is required, use additional copies of NRC Form 366A)

F. CORRECTIVE ACTIONS

1. Instrument air isolation valves on both units had a restraint device installed to prevent inadvertent operation and labels were affixed to alert the operator of potential consequences (e.g. reactor trip) if the valves were closed while the unit was on line.
2. Revised the system operating procedure to include appropriate cautions and warnings to alert the user of potential consequences (e.g. reactor trip) if certain sections of the procedure were performed with the unit on line.
3. Briefed site personnel regarding rigor and formality in the use of the human performance error prevention tools.

G. ADDITIONAL INFORMATION

1. Failed Components:
None
2. Previous Similar Event: A review of VEGP events over the past three years was performed. Licensee Event Report 1-2009-002 (Docket Number 05000 424) documents a reactor trip that occurred on Unit 1 on December 7, 2009 due to inadvertent contact with a handswitch by a control room operator. Although that event was due to a human performance error also, the causes associated with this event were different. Therefore the corrective actions put in place in response to the reactor trip that occurred on December 7, 2009 (LER 1-2009-002) did not address the failed barriers that caused this event.
3. Energy Industry Identification System Codes:
Instrument Air System-LD
Main Feedwater System-SJ
Auxiliary Feedwater-BA